

## **REMARKS**

Claims 11 and 13-23 are pending. Claims 12 and 56-70 are temporarily withdrawn as being directed to a non-elected species, but pursuant to PTO rules will automatically re-enter the application should generic claims be allowed.

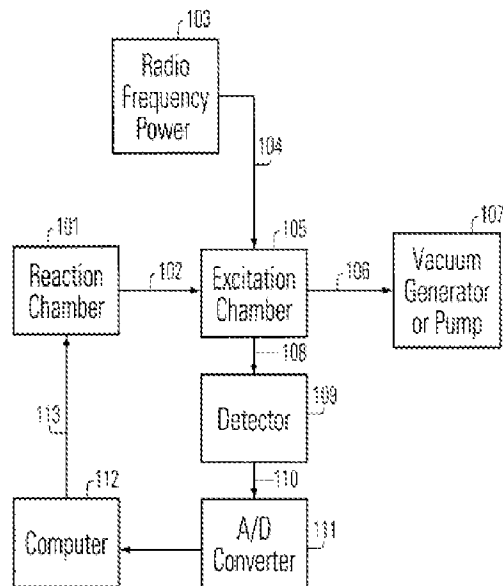
### **I. Rejections Over the Prior Art:**

In responding to the Examiner's prior art rejections, Applicant here only justifies the patentability of the pending independent claims (i.e., claim 11). As the Examiner will appreciate, should independent claim 11 be patentable over the prior art, narrower dependent claims would also necessarily be patentable. Accordingly, Applicant does not separately discuss the patentability of the dependent claims, although it reserves the right to do so at a later time if necessary.

Claim 11 has been rejected as obvious (35 U.S.C. § 103) by USP 6,538,734 ("Powell") in view of Fujimura.

As pointed out to the Examiner before, neither Powell nor Fujimura discloses the limitation that "the reference gas does not pass through the processing chamber," i.e., the chamber that holds the workpiece being processed.

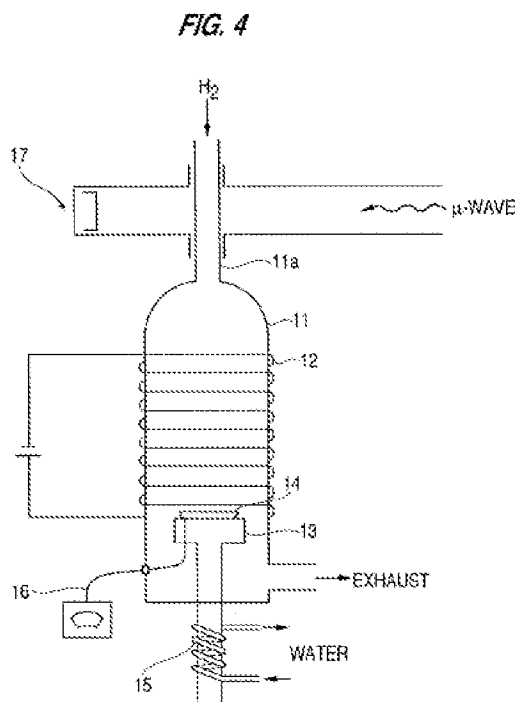
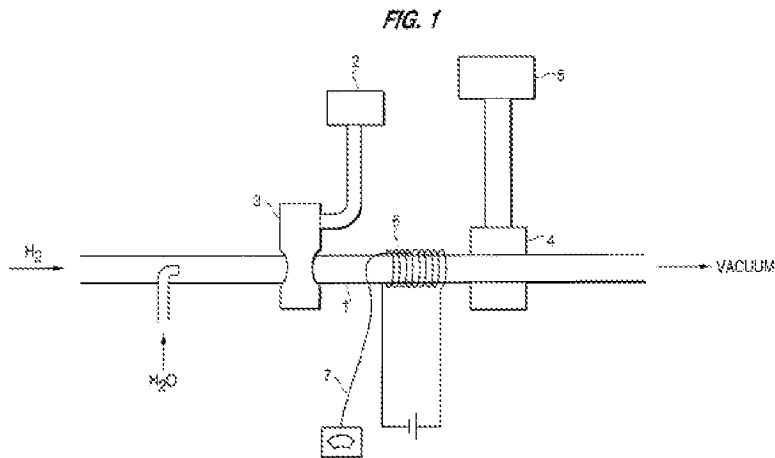
This is clearly not disclosed in Powell. Figure 1 of Powell is reproduced below. Powell is clear that his reference gas inlet is on his reaction chamber 101 (akin to the claimed "processing chamber"), and not on his excitation chamber 105 (akin to the claimed "plasma chamber"). *See* Powell, Fig. 1; claim 71 ("introducing a known flow of reference gas having a known spectral peak into a **reaction chamber**"). Thus, Powell's reference gas must pass through his reaction chamber 101 (processing chamber) before it reaches his excitation chamber 105 (plasma chamber).



Fujimura also does not disclose that “the reference gas does not pass through the processing chamber.” The examiner considers the water vapor (H<sub>2</sub>O) in Fujimura’s hydrogen [H<sub>2</sub>] plasma down-flow processing method to comprise a reference gas. See Fujimura, col. 3, ll. 30. By “down flow,” it is meant a plasma process in which a workpiece is positioned in the down-stream flow of the plasma. See Fujimura, col. 3, ll. 38-39 (noting that the “processing object [i.e., the workpiece] is processed on the down-flow side of the plasma.”). Thus, and referring to Figure 1, reproduced below, the workpiece being processed in Fujimura would appear on the right side (“vacuum”) of that drawing.<sup>1</sup> This is verified by other embodiments, such as that shown in Figure 4, also reproduced below, which shows the workpiece 14 in the down-stream flow of the hydrogen plasma, which again would contain the water vapor reference gas. Claim 1 provides yet further proof that the workpiece appear on the vacuum side of tube 1. See Claim 1: “processing an object at down-flow area of the hydrogen plasma in the vacuum chamber.” It is therefore clearly the case

<sup>1</sup> In this regard, note that Figure 1, unlike Figure 4 for example, is not a full plasma down flow processing apparatus, and thus does not show the workpiece being etched. Instead, Figure 1 shows a subset of a full processing system, and specifically shows those the portion for “studying interaction between quartz and hydrogen.” Col. 4, ll. 36-37.

that Fujimura's reference gas (water vapor) passes through the processing chamber where the workpiece is located downstream.



The Examiner does not address this limitation—i.e., that “the reference gas does not pass through the processing chamber”—in the Office Action. Applicant is confident that once this limitation is appreciated, and once it is understood that the reference gases in Powell and Fujimura pass through the processing chambers that hold the workpiece being processed, the Examiner will

lift Powell and Fujimura as a basis for rejection. Because this limitation is not disclosed or suggested in either Powell or Fujimura, these references in combination cannot render claim 11, or claims dependent thereon, obvious. See MPEP § 2143.03.

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Based on the above remarks, Applicant respectfully submits that the pending claims are allowable, and requests that a Notice of Allowance issue for these claims and for all claims that currently stand as withdrawn.

Respectfully submitted,

/ TGL /

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